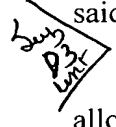


3 said first side, said structure comprising:
4  an opening portion formed through said second plate member, said opening portion
5 allowing cooling air from said fan motor to pass therethrough;
6 at least one recessed portion provided in said first side of said second plate member
7 and located outwardly with respect to said opening portion; and
8 at least one leg portion provided to said first plate member, and received by said
9 recessed portion so that said motor portion is at least partially located in said second side,
10 wherein said recessed portion has a depth at least as large as a thickness of said leg
11 portion.

REMARKS

Claims 1-5 and 8-19 are all the claims presently pending in the application. Claims 6-7 have been canceled.

Claims 2, 4 and 5 stand rejected upon informalities (e.g., 35 U.S.C. § 112, second paragraph). Claim 2 has been amended, above, to overcome this rejection. Specifically, the preamble of claim 2 has been modified to cite the structure of the fan motor. Regarding claim 4, Applicant notes that the antecedent basis for "said recessed portion" at the end of claim 4 is provided on line 1 of claim 4. Thus, both claims overcome the 35 U.S.C. § 112, second paragraph rejection.

Claims 8, 10, 12-13, and 15-17 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Uemura et al (U.S. Patent No. 5,573,383) (hereinafter "Uemura").

Claims 1-5, 9, 11, and 18-19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Papst et al. (U.S. Patent No. 4,513,812) (hereinafter "Papst").

These rejections are respectfully traversed in view of the following discussion.

I. THE CLAIMED INVENTION

Applicant's invention, as disclosed and claimed by independent claim 1 (and

substantially similarly by independent claims 2, 4, and 8), is directed to a fan motor of an electronic component. The fan motor is fixed to a thermally dissipating surface and includes an attaching plate with leg portions to fix the motor portion to the thermally dissipating surface. The thermally dissipating surface has recessed portions capable of accommodating the leg portion.

A feature of the present invention is a recessed portion having a depth at least as large as a thickness of a leg portion. Further, a feature of the invention is a cooling hole allowing cooling air from a fan motor to pass therethrough. An exemplary configuration of the recessed portion having a depth at least as large as a thickness of a leg portion is shown in Figs. 2-3 of the application.

With such features, the thickness of the fan-motor attaching member is not added to the thickness of the fan motor and thus it is possible to provide a relatively "thin", low profile fan motor for use in cooling an electronic component (e.g., see page 11, lines 14-24, page 12, lines 1-5, and page 13, lines 6-18 of the present application).

The conventional systems, such as those discussed below and in the Related Art section of the present application, do not have such a structure, and fail to provide for such an operation.

Such features are not taught by the cited references.

II. THE PRIOR ART REFERENCE

A. The Uemura Reference

The Examiner asserts:

*Claims 8, 10, 12-13 and 15-17 are rejected under 35 U.S.C.
102(b) as being clearly anticipated by Uemura (sic) et al.*

While the Examiner is attempting to equate Uemura with the present invention, Uemura neither teaches nor suggests the inventive structure for mounting a first plate member

associated with a motor portion of a fan motor onto a second plate member to be used in cooling an electronic component.

Specifically, Uemura discloses a mating tab 45, a support tab 40, and a guide wall 47 on flange portion 31 of a motor which could correspond (arguendo) to a leg portion of the present invention. Further, Uemura discloses an end plate 31 of a resin-made casing 21 on which a wall portion 40, an open portion 41, a mating tab 42, and a ring-shaped protrusion 43 are provided and which could correspond (arguendo) to a cooling plate of the present invention.

However, even assuming (arguendo) the structure above could correspond to the present invention, and that the end plate 32 of Uemura may have a portion (e.g., not shown) corresponding to a notched portion, Uemura does not have a portion corresponding to a recessed portion. Instead, there is a space between the members 46 and 45, but this space is disposed reversely in comparison to the present invention, and further this space is thicker than the end plate 32.

Moreover, the end plate 32 of Uemura is a part of the resin-made casing 21 which is made of a resin (e.g., synthetic resin) having a thermally insulative property, and therefore the end plate 32 cannot constitute a cooling (e.g., dissipative property) plate.

Furthermore, since the end plate is not intended to mount an electronic component thereon and is simply designed as a component that does not have the cooling function, the end plate may correspond to the cooling plate but differs from the cooling plate in function and effect.

Accordingly, the object and resulting structure of Uemura are entirely different from that of the novel present invention in which a “recessed portion has a depth at least as large as a thickness of [a] leg portion”.

Hence, turning to the clear language of independent claim 8, there is no teaching or suggestion of “[a] structure for mounting a first plate member associated with a motor portion of a fan motor onto a second plate member having a first side and a second side opposite from said first side, said structure comprising:

an opening portion formed through said second plate member;

at least one recessed portion provided in said first side of said second plate member

and located outwardly with respect to said opening portion; and
at least one leg portion provided to said first plate member, and received by said
recessed portion so that said motor portion is at least partially located in said second side,
wherein said recessed portion has a depth at least as large as a thickness of said leg
portion” (emphasis Applicant’s).

Additionally, dependent claims 10, 12-13, and 15-17 when combined with independent claim 8 define additional novel and non-obvious features.

Specifically, claim 12 defines at least one notched portion on a second plate member to define an outwardly expanded perimeter of the opening portion. Claim 13 defines a groove provided to a first side of a second plate to connect the notched portion to the recessed portion. Claim 15 provides for three recessed portions on the second plate member. Claim 16 provides for three leg portions on the first plate member. Lastly, claim 17 provides for a hole portion in the second plate member and a tongue portion in the second plate member extending in a central portion of the hole portion. The features of dependent claims 10, 12-13, and 15-17 when combined with independent claim 8 are neither taught nor suggested by Uemura and Papst.

B. The Papst Reference

The Examiner further asserts:

[Regarding claims 1-5, 9, 11, and 18-19] Uemaura (sic) et al discloses all the claimed limitations except the motor attached to a thermally dissipating surface. Papst (sic) et al discloses a fan motor comprising an attaching plate 21 affixed to thermally dissipating surface 2 with components 12, 13 thereon for the purpose of achieving a desired heat exchange. Since Uemaura (sic) et al. and Papst (sic) et al. are both from the same field of endeavor and/or analogous art, the purpose disclosed by Papsi (sic) et al. would have been recognized in the pertinent art of Uemaura (sic)et al.

However, Applicant respectfully disagrees. Specifically, as the Examiner admits,

Uemura does not teach or suggest the motor attached to a thermally dissipating surface (e.g., the motor case 30 is composed of resin). The Examiner relies upon Papst to make up for the deficiencies of Uemura, however such reliance is erroneous.

Specifically, Uemura and Papst are intended such that with the rotation of the fan motor the air is sent in a direction perpendicular to a rotational axis.

In sharp and fundamental contrast, the present invention is directed to the axial flow fan motor in which the blade has a screw (e.g., as shown in Fig. 3) to send the air in parallel to the rotational axis to pass through the cooling plate 51, thereby providing cooling effect. Uemura and Papst are arranged to send the air in a direction perpendicular to the rotational axis.

As clearly illustrated, each blade in Uemura and Papst is arranged in parallel to the rotational axis and does not have a screw. Therefore, Uemura and Papst clearly differ from the present invention.

Specifically, the air sending direction shown in Fig. 1 of Uemura is in parallel to the rotational axis and the sent air passes through a hole, but this sent air is the consequence of a circulation flow and is not directly caused by the fan motor. That is, Uemura requires a special air sending passage (e.g., the cooling-air passage 37) for circulation.

The present invention does not have the cooling-air passage 37 provided to be a dedicated air sending passage for the circulation of air. Thus the structure of the present invention is entirely different from Uemura.

Further, in Papst, as clearly illustrated in Fig. 2, an air sending direction is perpendicular to the rotational axis, and the heat sink 1 stands upright from the plate 2. This is completely different from the present invention in which a "*hole portion allows cooling air from the fan motor to pass therethrough*" in parallel to a rotational axis. Thus, even if combined (arguendo), Uemura and Papst would fail to yield the present invention.

Additionally, Papst neither teaches nor suggests the leg portion of the present invention, nor the unique arrangement for thinning a fan motor using the leg portion and the recessed portion. Specifically, Papst does not teach or suggest "*said recessed portion has a depth at least as large as a thickness of said leg portion*", as taught by independent claims 1, 2, 4, and 8. As shown in Fig. 2 of Papst, the direct current inner rotor motor 21 (e.g., alleged by the Examiner

to be “an attaching plate 21”) is clearly thicker than any recess provided in the heat sink 1.

Thus, while the Examiner is relying upon Papst to make up for the deficiencies of Uemura, the prior art does not provide any motivation for combining the references nor do they teach or suggest a structure in which the thickness of the fan-motor attaching member is not added to the thickness of the fan motor.

Hence, turning to the clear language of claim 1 (and substantially similarly in independent claims 2 and 4) there is no teaching or suggestion of “[a] fan motor comprising:

a thermally dissipating surface to be mounted to an electronic component;

a motor attached to said thermally dissipating surface; and

an attaching plate having a leg portion in a peripheral portion thereof for fixing said motor to said thermally dissipating surface,

wherein said thermally dissipating surface has a hole portion at least as large as said attaching plate, and a recessed portion that is formed on an attaching surface side of said thermally dissipating surface to said electronic component and that accommodates at least said leg portion of said attaching plate therein,

wherein said recessed portion has a depth at least as large as a thickness of said leg portion, and

wherein said hole portion allows cooling air from said fan motor to pass therethrough” (emphasis Applicant’s).

For the reasons stated above, the claimed invention is fully patentable over the cited references.

Further, dependent claims 3, 5, and 9-19 when combined with their independent claims define additional novel and non-obvious features.

Further, the other prior art of record has been reviewed, but it too even in combination with Uemura and Papst fails to teach or suggest the claimed invention.

III. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicant submits that claims 1-5 and 8-19, all the claims presently pending in the application, are patentably distinct over the prior art of record and are

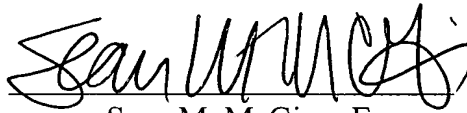
record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview. The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

Date:

12/26/00



Sean M. McGinn, Esq.

Reg. No. 34,386

McGinn & Gibb, PLLC
8321 Old Courthouse Rd. Suite 200
Vienna, VA 2218-3817
(703) 761-4100
Customer No. 21254